Refine Search

Search Results -

Terms	Documents
L13 and (wireless$2 or contactless$2)	5

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L14

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Wednesday, June 13, 2007 Purge Queries | Printable Copy | Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ		
L14	L13 and (wireless$2 or contactless$2)	5	L14
L13	L11 and(self adj check$6 or track$3 or trac$3 or monitor$3)	8	L13
L12	L11 and (self adj check$6 or track$3 or trac$3 or monitor$3) same (wireless$2 or contactless$2)	0	L12
L11	(restaurant or bar) same (customer or consumer) same (manag$6 or control$5 or direct$3 or gestion$6 or budget$3)same (after or follow$3) same (din$3 or eat$3) same (payment or pay$6)	22	L11
L10	(restaurant or bar) same (customer or consumer) same manag$6 same (post or after or follow$3) same din$3 same (payment or pay$6)	2	L10
L9	"restaurant customer" same manage$4 same (post or after or follow$3) same din$3 same (payment or pay$6)	1	L9
L8	"restaurant customer" near20 manage$4 near20 post adj din$3 near20 (payment or pay$6)	1	L8
L7	L6 and (705/30).ccls.	7	L7

L6	L5 and @ad<20021220	40	L6
L5	L4 and (updat$5 or review$5)	59	L5
L4	L3 and (calculat$5 or generat$5 or determin$5 or analyz$5)	59	L4
L3	L2 and manag$5 same (bad or delinquent$2 or delinquenc$2 or debt$3 or past adj due or overdue) same ag$3	59	L3
L2	"accounts receivable"	2485	L2
L1	"account$5 receivable"	0	L1

END OF SEARCH HISTORY

End of Result Set

L14: Entry 5 of 5 File: PGPB Sep 26, 2002

DOCUMENT-IDENTIFIER: US 20020136214 A1
TITLE: Pervasive computing network architecture

Detail Description Paragraph:
[0024] The consumer touchpoint device 10 comprises a display and input device such as a touchscreen 12, a biometric sensor 13, navigation buttons 15, an antenna 16 for wireless communication with a cellular tower 20, and a low power radio frequency (RF) transceiver 60 (FIG. 2) for communicating with at least one access controller 81 (FIG. 5). As shown in FIG. 1a, the touchscreen 12 is preferably disposed on an upper portion of the consumer touchpoint device 10, and preferably comprises a display screen such as a liquid crystal display (LCD). The display screen preferably comprises a 16 level grayscale, 320.times.240 pixel LCD with a backlight, but alternatively may comprise a gas plasma display or other type of suitable display. Although gas plasma displays may produce very sharp monochrome images, they require much more power than the presently preferred low power LCD displays. As presently embodied, the touchscreen 12 facilitates input via a user's finger or an attached stylus. The consumer touchpoint device 10 preferably comprises an integrated personal digital assistant (PDA).

Detail Description Paragraph:
[0025] FIG. 1b illustrates a consumer touchpoint device 10' having a similar construction to that of FIG. 1a and further including a keypad 14. In the illustrated embodiment wherein the consumer touchpoint device 10' is integrated into a PDA and a wireless phone, the display 12 is the display on the portable phone and the keypad 14 serves as the keypad for the wireless phone. The touchscreen 12 of the consumer touchpoint device 10 is similarly constructed, with the touchscreen 12 serving as the keypad for the wireless phone.

Detail Description Paragraph:
[0039] The m-ENGINE.TM. shall provide circuitry to support power management. The power management circuitry shall include battery monitoring, and low power standby by enabling and disabling power to peripherals that are either internal or external to m-ENGINE.TM..

Detail Description Paragraph:
[0069] The m-ENGINE.TM. hardware shall be able to support firmware/software upgrade through the m-CONNECT.TM. Bluetooth RF module connection. When software upgrade is needed, the updated software will be downloaded through the m-CONNECT.TM. wireless link to the system DRAM. The Flash will be updated when the complete downloaded file in DRAM is checked and free from any errors.

Detail Description Paragraph:
[0074] In the illustrated embodiment, each access controller regularly reports to the knowledge center 121 the identifications (y-TINs, defined infra) of the particular consumer touchpoint devices with which the access controller is presently in communication. The knowledge center is thus able to track the location of each consumer touchpoint device 10 by monitoring the access controller(s) with which the consumer touchpoint device 10 is presently in communication. In another

embodiment, the access controllers of each access zone regularly report to the coordinating access controller of the access zone the identifications (y-TINs) of the particular consumer touchpoint devices with which the access controllers in that access zone are presently in communication, and the coordinating access controllers regularly report the information to the knowledge center 121. The knowledge center is thus able to track the location of each consumer touchpoint device 10 by monitoring the access zone with which the consumer touchpoint device 10 is presently in communication.

Detail Description Paragraph:
[0075] In a preferred embodiment, the one access controller is connected to the knowledge center 121 via the Internet. In any event, the access controllers preferably can be managed remotely, over for example the knowledge center 121 network, from a management center via, for example, SNMP interfaces. The access controllers may further be monitored and managed through the knowledge center 121.

Detail Description Paragraph:
[0076] The Ethernet connecting the access controllers may comprise, for example, an Ethernet 802.3 (10/100 Base T) connection using RJ 45 connectors, or may comprise a wireless Ethernet 802.11 system utilizing moderate range RF wireless connections. In another embodiment, a plurality of the access controllers in a vicinity are networked together via moderate range RF connections using a HomeRF protocol, which is sponsored by the HomeRF Working Group, Inc. and which may be implemented using, inter alia, BB160 PC Adapter cards and related components manufactured by Motorola, Inc. in alternative embodiments, connections can include wireless modems, other wireless LANs, wireless Personal Area Networks (PANs), cellular telephone networks, digital communication systems, etc. connecting the access controllers to one another.

Detail Description Paragraph:
[0084] Bluetooth is a short-range wireless, open standard. It is designed to operate in the unlicensed 2.4 GHz ISM (Industrial, Scientific, Medical application) band. The Bluetooth specification includes air interface protocols to allow several Bluetooth applications to communicate simultaneously.

Detail Description Paragraph:
[0099] An embodiment of a modem access controller which comprises a wireless modem utilizing Bluetooth technology ("m-Modem.TM."), is disclosed below.

Detail Description Paragraph:
[0111] The following software architecture applies to the m-MODEM.TM. software system, which implements the Dial-up Networking Profile specified in the Bluetooth Specification Version 1.0 B. FIG. 2 shows the software system architecture. Data terminals with Bluetooth capability can connect to the Internet Service Provider (ISP) through m-MODEM.TM.. Data terminal may be m-ID.TM., m-PAD.TM., m-PHONE.TM., or any other wireless device with Bluetooth Serial Port Profile support.

Detail Description Paragraph:
[0144] The above discussed access controllers, including modem access controllers, can be deployed into existing commerce systems such as set forth in FIG. 1 and further including, for example, computer terminals in a network, portable devices, and other electronic devices used in connection with the financial industry (e.g., securities trading), medical (e.g., hospitals), transportation, food (e.g., vending machines), petroleum (e.g., gas pumps), retailing, gaming (e.g., casinos), entertainment (e.g., convention centers), manufacturing (e.g., supply-chain management), educational (e.g., universities), telecom and mobile suppliers, media entertainment, law enforcement, government (e.g., automated library check-out terminals), and other industry sectors. In accordance with one aspect of the present invention, the access zones are particularly suited for residential, working, and densely populated areas where transactions are likely to occur.

Businesses using the access controllers of the present invention can realize advantages such as expediting payment processing, reducing errors, tracking item-level movements and providing sales and promotion analyses.

Detail Description Paragraph:
[0148] Communication of the consumer touchpoint device 10 to and from cellular towers and access controllers is accomplished under control of microprocessor 54 via the Bluetooth module 60 and the cell phone chipset 62, respectively. As presently embodied, the consumer touchpoint device 10 can access the Internet and the knowledge center 121 through either the cellular or Bluetooth channels. The flash memory 56 preferably comprises an HTML browser for accessing the Internet and reading E-mail, stock quotes, weather, scores, etc. By way of example, computer languages such as Java by Sun Microsystems Inc. of Mountain View, Calif. or ActiveX by Microsoft Corp. of Redmond, Wash. or HDML (Handheld Device Markup Language) by Unwired Planet, Inc. of Redwood City, Calif., may be employed as well. The display circuitry 64 controls the display 12 of FIG. 1, and the user input circuitry 66 controls and corresponds functionally to the keypad 14 of FIG. 1. As presently embodied, the knowledge center 121 is configured to dynamically transform any standard HTML web page and to deliver the converted content as either HTML, or CHTML (Compact HTML) for HTTP devices or as WML for WAP (Wireless Application Protocol) devices, thereby reducing the need to create device specific pages or web sites for the consumer touchpoint device 10.

Detail Description Paragraph:
[0149] The Bluetooth module 60 in accordance with the present invention utilizes Bluetooth technology, which is a low-powered, short-range, cable replacement, radio technology system that allows products containing Bluetooth technology (see www.bluetooth.com) to be interconnected via wireless communication. Bluetooth uses the 2.4 GHz Instrumentation, Science, Medical (ISM) unlicensed band. The RF transceivers of the consumer touchpoint devices and the access controllers are preferably set to a nominal range of 10 meters. In accordance with a preferred embodiment, they are set to have a range of 15 meters, for a resulting 30 m radius of coverage for each access controller. A spectrum of hop frequencies are utilized beginning at the lowest frequency which is 2402 MHz and each of the hop frequencies is 1 MHz above the next lower frequency. A connection may be made between the two RF transceiver s by sending a page message. Such a page message can include a train of 16 identical page messages on 16 different hop frequencies. Packet data transmitted is preferably TCP/IP based. The system may use a Synchronous Connection Oriented (SCO) link for point-to-point, full duplex links, normally used in voice communication. For the application described herein, the Asynchronous Connectionless Link (ACL) may be used. ACL provides one frame duration links with full duplex communications. ACL communications use a time division duplex scheme. A first slot provides a transmission from the master to the slave and a second slot provides a transmission from the slave to the master. Each slot is transmitted on a different hop frequency. The device initializing the transmission is designated the master and the device receiving the transmission is designated the slave. Of course, the Bluetooth module 60 will allow the consumer touch point 10 to communicate with other Bluetooth enabled peripheral devices, including modems, printers and the like.

Detail Description Paragraph:
[0159] FIG. 6 is another schematic diagram illustrating the knowledge center 121 of the presently preferred embodiment, connected at its front end to a plurality of consumer touchpoint devices 10 via at least one access zone 91 and further connected to at least one consumer touchpoint device 10 via a cellular carrier station 20. As shown in FIG. 6, the knowledge center may also be accessed by other conventional consumer devices 136, such as handhelds and PDAs, and by PC browsers 137, for example, via a WAN such as the Internet 139. The knowledge center 121 provides, inter alia, a gateway to the businesses 127 at its back end, and further provides a central management administration console for maintaining a central

configuration repository to control and monitor all processes of the entire network of access zones, including processes of the web server, application server, database server and the access controllers (e.g., 81', 83', 85').

Detail Description Paragraph:
[0162] A Location-versus-ID mapping table for tracking each consumer touchpoint device is illustrated in FIG. 7, with the x-axis (x-TIN) identifying a geographical location in terms of access zones and the y-axis (y-TIN) identifying the consumer identification in terms of consumer touchpoint device identification numbers. The x-axis may be defined in terms of, for example, a Terminal Identification Number (TIN) of a particular access controller (e.g., 81') corresponding to the access zone that is presently in RF communication with the consumer touchpoint device of interest. Put another way, the TIN of the controlling access controller (e.g., 81', 83', 85') of the access zone that is in communication with the consumer touchpoint device is used. As an example, if the consumer touchpoint device of interest is in an access zone 95, then the x-TIN comprises the TIN of the access controller 85'. For greater accuracy, the x-TIN may comprise the TIN of the particular access controller (e.g., 85) that is under the control of the controlling access controller (e.g., 85') of the access zone (e.g., 95) in communication with the consumer touchpoint device of interest. As presently embodied, a unique y-TIN is assigned to each consumer touchpoint device during the initial device activation, and this unique y-TIN is used by the knowledge center 121 to identify the consumer touchpoint device of interest.

Detail Description Paragraph:
[0164] Thus, the WHO and WHERE of the consumer is tracked in real-time in accordance with a preferred embodiment of the present invention. Content delivery from the modular, flexible, and scalable knowledge center 121, and through the associated business 125, can be tailored to users, groups, location, and time. The businesses 125 are thus provided with the ability to extend their reach to consumers, allowing for a secured, personalized, seamless integration of content for mobile commerce and allowing for the unique personalization of the consumer's experience and services based on parameters including who, what, when and where. With the time/location specific services provided by the knowledge center 121, businesses are able to obtain additional revenue while enhancing loyalty in the competition for customer ownership.

Detail Description Paragraph:
[0165] Importantly, consumers are further provided with unlimited access to the same features, e.g., the businesses 125, the Internet, and other applications, when the consumers are within the access zones. Equally important perhaps is the fact that, in accordance with one aspect of the present invention, the businesses 125 are likewise provided with access to the consumers. Recognizing the low-power nature of the Bluetooth technology, the present inventors have discovered a way to harness this wireless technology to generate a pervasive computing network formed of smaller access zones. The pervasive computing network by its nature will perhaps never provide full geographical coverage to the user, since each access controller is configured in the illustrated embodiment to have a diameter of coverage of about 30 m.

Detail Description Paragraph:
[0167] In accordance with a method of the present invention, a unique appeal of the present invention is to provide consumers with a free pervasive, interactive, communications device which the customers will actually use. Business, on the other hand, will be able to purchase the consumer touchpoint devices and access controllers for relatively small amounts. In one embodiment, a few key businesses will purchase the consumer touchpoint devices at a discounted rate of, for example, $100 per device. A retail bank or other financial institution may be able to save $100 per customer per year if it were able to have the customer perform all of its banking functions on line. In exchange for taking the free consumer touchpoint

device, the customer will agree to perform her banking functions thereon. For example, the consumer will utilize applications for home banking, online bank statement reconciliation, on-line payments, and management of accounts using her consumer touchpoint device. The applications will also enable financial services institutions to push (defined, infra) other services or special promotions to their customers to enhance their business. Moreover, the bank can save additional money on credit cards by issuing the consumer touchpoint devices as virtual credit cards, wherein a transaction is achieved by the user entering her PIN number on the touchscreen and/or touching the biometric. The real-time authorization information is transmitted from the consumer touchpoint device to the knowledge center through the relevant access controller(s) and, subsequently, it is approved and the amount debited from the user's credit card account. In effect, a virtual credit card is used at a physical point of sale to perform a real-time transaction, all in the hand of the user. When other businesses license the touchpoint devices and access to the knowledge center (and perhaps pay a portion of the cost for the consumer touchpoint devices), similarly to that discussed above in connections with financial instructions, costs are reduced further with the other businesses realizing similar benefits. As more and more businesses join, costs are reduced and all entities realize greater profits. The consumer touchpoint devices can also be licensed to wireless communication services (e.g., cellular). The above approach can enable a large population area, such as Asia, to be provided with pervasive computers whereas many of the people would not otherwise even have computers.

Detail Description Paragraph:
[0173] As another example, a consumer within an access zone of an ATM machine can enter a transaction from her consumer touchpoint device, and the ATM under the control of the knowledge center will comply accordingly. For example, the consumer can enter with a single stroke (e.g., with a touch of the biometric sensor 13) a pre-set "quick $50" instruction from the consumer touchpoint device in which case the ATM under the control of the knowledge center will within seconds output $50 thus relieving lines at ATM machines. Similarly, payments at other commercial outlets will be timely facilitated to reduce lines. As yet another example, the consumer touchpoint device is enabled to provide information (e.g., to push the information) relating to questions such as "Where am I," "Where am I going," "How do I get there," "How is the traffic," and "What can I find in this neighborhood." If a business traveler arrives in a foreign city, she can use her consumer touchpoint device to receive the names of Italian restaurants close to her hotel (a pull communication) and, subsequently, the knowledge center may generate coupons (a push communication) for one or more of the restaurants. The next day the consumer touchpoint device may push the question "How was your dinner at the `Restaurante`?" The following year, when the consumer arrives in the same city, the touchpoint device may suggest (push) the same restaurant based upon the consumer's response to the question. When the consumer arrives in a different city the consumer touchpoint device may recommend (push) a list of Italian restaurants to the consumer, based upon the fact that the consumer tends to eat at Italian restaurants.

Detail Description Paragraph:
[0174] In accordance with another aspect of the present invention, the knowledge center not only tracks the user's geographical travels and geographical transactions with respect to time, but also tracks the user's Internet browsing and transactions with respect to time. Thus, in the above example, if the user is known or has been learned by the knowledge center to regularly check the skiing conditions via the Internet with the consumer touchpoint device during winter months, the knowledge center may suggest (push) ski resorts and lift ticket discounts, for example, when the user enters a resort town of Colorado, U.S.A., without the user ever having asked for the information or informed the knowledge center of the fact that the user likes to ski. Similar examples may apply to a user who regularly review movie-review web pages and travels to an adjacent city for the weekend--the knowledge center may push information to the user regarding movies that are playing at nearby theatres. A user in the grocery store example above, who

has been determined by the knowledge center to have somewhat of a sweet tooth based on various candy purchases made with the device, may walk through the aisles of a shopping mall (or the aisles of another food store) with the consumer touchpoint device remaining relatively passive until the consumer comes within range of a candy store (or section). In another embodiment, the consumer touchpoint device would immediately notify the consumer of the presence of the candy store when the user merely enters the mall. User modes are contemplated by which the user can adjust the behavior and helpfulness of the consumer touchpoint device.

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